TAYLOR (R.W.)

# A CONTRIBUTION TO THE STUDY OF MULTIPLE NEURITIS OF SYPHILITIC ORIGIN

BY

R. W. TAYLOR, M. D.

SURGEON TO CHARITY HOSPITAL, NEW YORK



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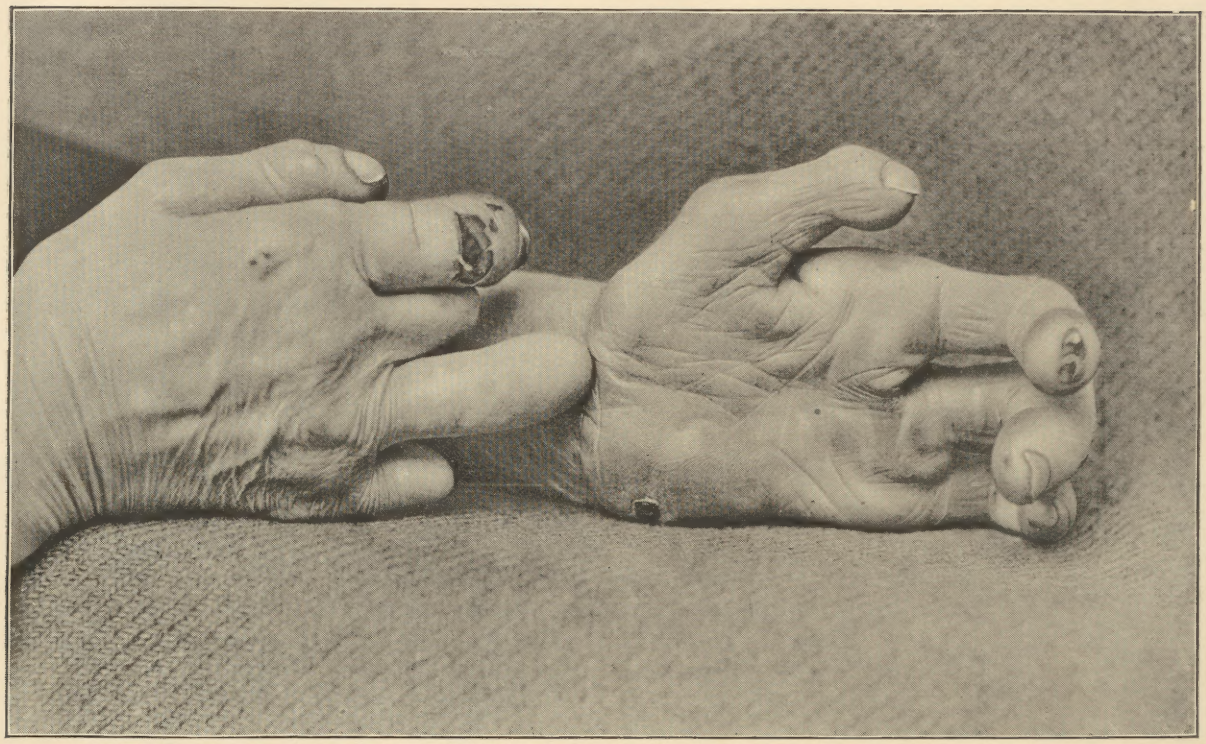

FIG. 1.

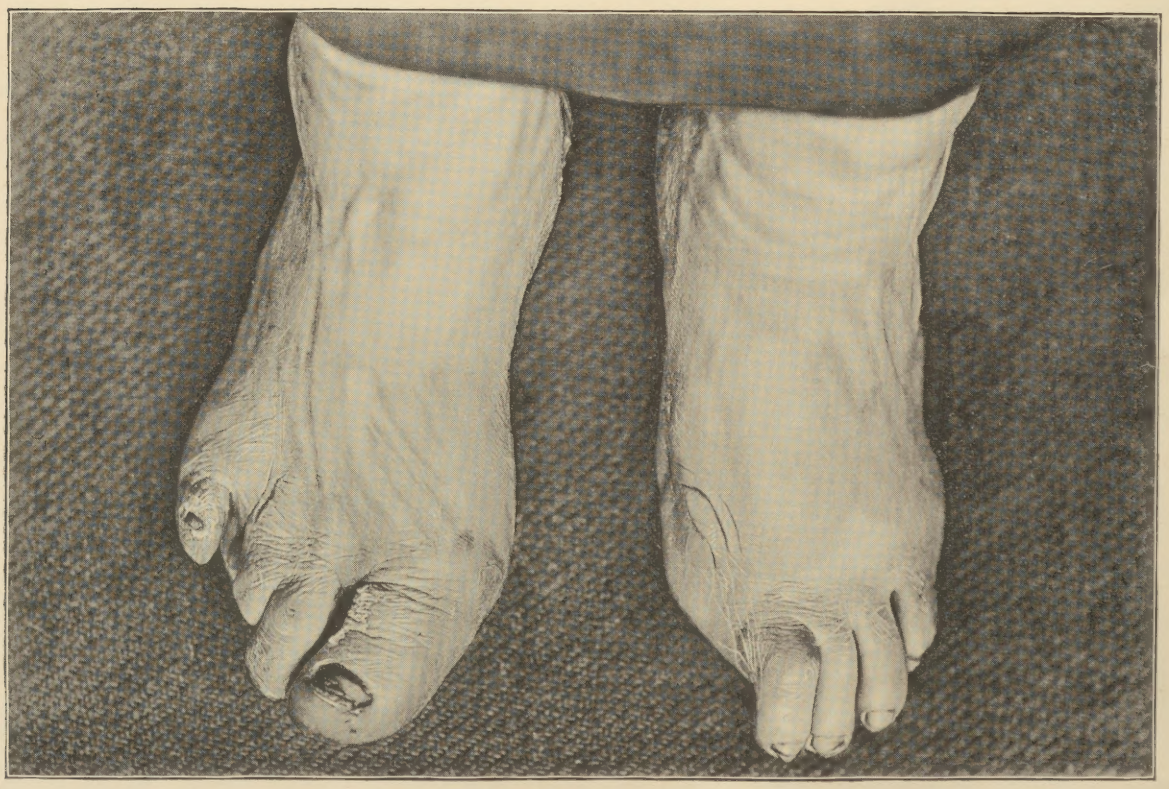

FIG. 2.

DR. TAYLOR'S CASE OF MULTIPLE NEURITIS OF SYPHILITIC ORIGIN.

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# A CONTRIBUTION TO THE STUDY OF MULTIPLE NEURITIS OF SYPHILITIC ORIGIN.

Among the many yet unwritten chapters on the ulterior effects of syphilis upon diatheses and dyscrasiæ, on its symbiosis with other morbid processes and conditions, and on the various tissues, notably cerebro-spinal, arterial, muscular, visceral, dermal, and mucous, is the one which shall establish its relation to the morbid process in the peripheral nerves, which is found early and late in its course, and even perhaps many years after it has seemingly disappeared from the economy. While our knowledge of the syphilitic affections of the brain and spinal cord is very extensive and in some instances full and systematic, that relating to the effect of the disease upon the peripheral nerves is notably fragmentary and unsatisfactory. This is especially the case as to the relation which syphilis bears as an ætiological factor in the causation of multiple neuritis, a subject which has as yet received the attention of only a few observers. The reasons why the multiple neuritis of syphilitic origin is so little known are, first, that our knowledge of the general subject is yet in its infancy; second, that cases in which syphilis is a causative factor (at least seemingly) are very rare; and, thirdly, that its connection with the nerve disorder is, for various reasons, such as the incompleteness of the history of the case, the possible late evolution of the neuritis, and the absence of concomitant or commensurative symptoms or lesions is overlooked.

Our knowledge of multiple neuritis may be said to have been formulated and systematized within the past five or six years, though, of course, the observations and studies of many physicians over a long stretch of years led up to the era of light. It is a subject of congratulation that American observers have played no small part in the study of this subject, and have aided materially in its partial crystallization. As it stands to-day, the subject of multiple neuritis is weakest in the direction of ætiology and pathological anatomy, but hopeful signs are to be seen on all sides, and, as time goes on, anomalous facts will be reconciled and lacunæ will be filled.

In this paper I wish mainly to put on record a case carefully observed for many years, in which, coincidently with the evolution of secondary syphilitic manifestations, a nervous disorder began and has since continued unchanged, attended with marked symptoms and leading to peculiar mutilations. It is, in my judgment and in that of friends well versed in neurology, a well-marked instance of multiple neuritis. Seeing that this paper is an *avant-courier* in this particular branch of the subject of multiple neuritis, I have thought it worth while also to present a *résumé* of its literature.

In the year 1879 Buzzard * published a lecture in which was detailed a case of sciatica with muscular wasting and weakness of the limbs, which that author considered to be caused by syphilis. In 1881 Ormerod † presented to the Pathological Society of London a case of painful enlargement of the median nerve of the upper extremity, which he thought was the result of hereditary syphilis. This communication was followed by a second consideration of this subject by Buzzard,‡ who detailed the history of a case in which there was paralysis of the muscles of the face and of both the upper and lower extremities and of the trunk, with disseminated anæsthesia.

The next paper on this subject was by Ehrmann # in 1886, and it was followed by a communication by C. K. Mills ‖ before the American Neurological Association. Then, in 1888, Laschkewitch ^ published a clinical lecture upon this subject, which is very unsatisfactory, for the reason that the history of syphilis in the case was not well established. In this same year Leyden ◊ published two lectures on inflammation of peripheral nerves, in which he speaks of a case in which he thought the nerve affection was caused by syphilis. Finally, in the recent excellent compendium of Bowlby ‡ we find a section upon neuritis of syphilitic origin, in which the cases of

* Read before the American Association of Genito-urinary Surgeons at its fourth annual meeting, June 4, 1890.

* Clinical Lecture on Cases of Neuritis, Syphilitic and Rheumatic. *Lancet*, March 1, 1879.

† *British Med. Journal*, 1881, vol. i, p. 88.

‡ Harveian Lectures on Some Forms of Paralysis dependent upon Peripheral Neuritis. *Lancet*, November 28 and December 1, 1885.

# Ein Fall von halbseitiger Neuritis spinaler Aeste bei recenter Lues. *Wiener mediz. Blätter*, 1886, Nos. 46 and 47.

‖ Notes of Some Cases of Multiple Neuritis (or Myelitis) of Syphilitic Origin, with Remarks on the Difficulty of diagnosticating Multiple Neuritis from Some Forms of Myelitis. *Medical News*, August 20, 1887 and *N. Y. Medical Journal*, July 3, 1887.

^ Neuritis multiplex chronica luetica. *Russ. Med.*, St. Petersburg, 1888, vol. i, pp. 87 to 90.

◊ Die Entzündung der peripheren Nerven, deren Pathologie und Behandlung. Berlin, 1888, p. 26.

‡ Injuries and Diseases of Nerves and their Surgical Treatment, Philadelphia, 1890, p. 460 *et seq.*

Buzzard and Ormerod are given and a personal case briefly detailed.

The foregoing are the only communications I can find after a tolerably extended search in medical literature. As a further evidence of the paucity of knowledge of the influence of syphilis in the production of neuritis, I may say that the author of the admirable Middleton Goldsmith lectures* upon multiple neuritis which have done so much to enlighten the medical mind, both at home and abroad, does not recognize syphilis as a cause, nor does he quote a case in which such a relation was claimed, though he recognizes in his category of causes the direct action of such infectious diseases as diphtheria, variola, typhoid and typhus fevers, tuberculosis, and malaria.

In addition to the ætiological bearing of my case, I shall call especial attention to certain features of resemblance between its lesions and those of leprosy, which open up a subject now little known and understood.

The history of my case is as follows:

The patient is a female, married, a domestic, born in Norway, and forty years of age. While she can not be called stupid, she is far from being very bright and may be said to be rather weak-minded. She has been in America since her twenty-fourth year, and has no knowledge of ever having seen or having come in contact with lepers or having lived in the vicinity of such sufferers. She entered Charity Hospital in June, 1882, and has been under my observation for long and short periods until 1887, and has since been seen by me frequently from time to time until now. It was very difficult even in 1882 to get a clear chronological history of her illness, and to-day it is almost impossible. It thus happens that when at Bellevue Hospital, within two years, she stated that she was infected with syphilis fifteen years ago, and she gave other incorrect information as to the early phases of her syphilis. In early life she had measles, scarlatina, pertussis, and diphtheria, but she grew up a strong and healthy woman. When she entered Charity Hospital in 1882 she gave us the impression that she had been syphilitic then eight years, though various very cogent facts showed quite clearly that infection took place at a much later period. She maintained that her infection began during her first pregnancy, more than eight years before, but it seems very probable that after parturition she had a simple erythematous and furuncular eruption upon the legs, with an exacerbation of a mild form of rheumatism, from which she had suffered for years. Certain it is that her second child, like the first, was free from syphilis, and that she had not taken antisyphilitic remedies, which had induced a latent condition of the disease. Her third child was also free from syphilis, and she, before and just after its birth, showed no evidence of the disease. When she came to Charity Hospital she brought with her a baby girl (the first and only offspring of a second husband) which was two months old and was suffering from marked hereditary syphilis. The condition of the child clearly pointed to activity of syphilis in the mother. The latter had had no miscarriages after the birth of her second and third healthy children and before the birth of the fourth and syphilitic child. These facts, therefore, go to show that syphilitic infection took place in the mother between the dates of birth of her third and fourth children. Syphilis was probably contracted from the second husband, who went to sea during the woman's fourth pregnancy and has never been heard from since.

A careful consideration of all facts convinces me that the woman was infected rather less than two years prior to her first entry into Charity Hospital in 1882, therefore that she has now been syphilitic about ten years. I am thus careful in stating the case because the woman has told so many different stories, and it is important, in the study of her syphilitic history, to be correct as to its chronology.

In June, 1882, she had a typical syphilitic iritis and the copper-colored stains of a vanished eruption over the body, and particularly over the legs. She also suffered from rheumatism, which was worse at night. The truth was that the woman gave ample evidence of being in the power of active syphilis which, owing to absence of treatment, had run on unchecked. She was thin and weak, and responded badly to medicine.

Early in the year 1882 (in the last half of the second year of syphilis) she noticed that the sensation on the backs of both hands was impaired, and when she had been in the hospital a few weeks we found marked analgesia and anæsthesia over the backs of the fingers, hands, and wrists, particularly upon the left side. At this time she had pain in the eyes and dimness of vision, and the ophthalmoscope showed double neuro-retinitis. Under "mixed treatment" and local mercurial inunctions the morbid process in the eyes was promptly arrested and cured. But little effect was produced upon the causes underlying the analgesia, which extended slowly up the arms. During this time she also suffered from headaches, which were sometimes relieved by the iodide of potassium, at others by nervine stimulants (valerian, ammonia, etc.). It was noted that toward Christmas, 1882, the analgesia had extended up the arms as far as the elbows, and that it was complete on the extensor surfaces and was encroaching on the flexor surfaces.

In reviewing the case up to January, 1883, it was evident that the treatment (which, by the way, it was necessary to discontinue from time to time) had improved the patient's nutrition, had cured her iritis and neuro-retinitis, had at times relieved her rheumatism and headaches, but had had little, if indeed any, effect upon the sensory disturbances going on in the upper extremities.

It should be stated that coincidently with the analgesic symptoms pains, dull and aching and severe and lancinating, were complained of in the arms, together with a feeling of numbness and heaviness.

In February, 1883, a new order of phenomena was noted. The patient began to complain of tenderness, pain, and swelling in the left heel, and soon after in the corresponding foot. This pain extended up to the knee and was dull and seemingly deep-seated in character. It sometimes coexisted with the similar pains in the arms, and at others those of one region ceased, and again they seemed at times to oscillate between the upper and lower extremities. At this time diffuse hyperplasia was noted on the prominences of both cheeks, and a similar condition was found on the region of the left ankle. The appearances were those of acute diffuse gummatous infiltration into the skin, as well as into the subcutaneous tissue. At this time also there were tender spots of periostitis over the cranium and the headache was sometimes severe. In May, 1883, she weaned her baby, which under treatment had become healthy and blooming. At the end of 1883, a little less than two years from the date of onset of the sensory disturbances, it was found that the analgesia and anæsthesia had extended up each arm to the shoulder, being complete on the extensor surfaces and partial on the flexor surfaces. At this time also an analgesic spot was found on the dorsal aspect of the left shoulder. During all this period of increasing nervous disturbance the patient had complained of little, if any, impairment of muscular power. She took care of her baby and at times assisted in the general care

* *Med. News*, vol. l, 1887, Nos. 6, 7, 8, and 9.

of the ward, but toward the end of 1883 she burned, scratched, scalded, and in many ways injured and bruised her fingers, owing to the loss of sensation and tactile sense. At this time also she began to complain of numbness in the feet, and particularly in the toes.

In January, 1884, the following condition was noted: Beginning at the toes, the analgesia extended up both legs, but more markedly on the outer and anterior aspects, nearly to Poupart's ligament. Though analgesic, there were spots and patches in which some sensibility to light and hard pressure could be felt. During this year the patient complained at intervals of numbness of the upper and lower extremities, and often said that her arms felt as heavy and unwieldy as if they were dead. Though the analgesia was complete from the shoulder down, the prick of a pin could be felt in the palm of the hand. It was noted at this time that examinations were made of the nerves forming the brachial plexus, and that it could not be determined that they were perceptibly thickened. For months the patient suffered paroxysmally with severe headaches, which prevented sleep at night. In the summer of 1884 the degenerative changes began in the fingers, owing to bruises, burns, and to the development of panaritium, and they continued to attack one finger after another during the following four years. These degenerative changes began in indolent ulcers and bullæ, resulting from various traumatisms which showed no tendency to heal, but caused the tissues—dermal, fibrous, and bony—to slowly melt away by molecular necrosis. In this way first the skin and fibrous tissues disappeared, and then portions of the bone in spicula and in the form of detritus. When the degeneration was not very active and extensive, healing occurred—as, for instance, when the tip of a thumb was attacked—but in most instances unsightly and painful deformities were produced, which required surgical intervention to bring about sightly and tolerably serviceable stumps. It was frequently remarked that fingers and toes which had been the seat of obstinate ulcers usually healed kindly after amputation, partial or complete, followed by proper dressing.

An inspection of the engravings will show the appearances of the hands and feet as they exist to-day. On the right hand (see Fig. 1) the soft parts of the last phalanx have disappeared; of the index finger nearly all of the first phalanx is absent, and a characteristic ulcer may be seen over its dorsum. The last phalanx and a part of the second of the middle finger, the last phalanx of the ring finger, and half of the little finger are shown to be absent. On the left hand there is loss of the distal part of the thumb; on the index finger the nail and its bed, destroyed by panaritium, may be seen; the middle finger has disappeared, owing to successive amputations; and the two remaining fingers are in fair condition.

The appearances of the feet are well shown in Fig. 2, and do not need further specification. The deformity was great and unsightly, and it grew more marked as years went on by the gradual contraction of the flexor muscles, giving the hands the appearance of claws. A person unfamiliar with the case might readily take it to be one of anæsthetic leprosy, and, indeed, several very competent men leaned toward this opinion.

During the years 1884 to 1886 the patient was in and out of the hospital at irregular periods, and the treatment was far from being as systematic and thorough as it should have been. She at one time suffered from left bursitis, at another she was attacked with gummatous infiltration in both legs, and later an iritis appeared again in the left eye, which had been attacked some years before. Then keratitis attacked this eye, and in its train left a leucoma. During this period also the patient suffered from several mild attacks of facial erysipelas, and as a consequence the atrophy of the skin of the face, which had taken place some years before, became more pronounced, and as a result a double ectropion was produced, so that the patient can not close her eyes without the aid of her fingers.

It may be well to mention the fact that the aching pains and numbness in the limbs, which began as early as 1882, were complained of during the years above mentioned.

The foregoing facts will, I think, give a very clear idea of the course of the disease in this patient and of the ravages produced by it. From 1877 until now (June, 1890) the woman's condition was not materially altered. By reason of the mutilations of the hands she has been unable to gain her living, and is capable of very little and rather limited manual labor. She can walk fairly well. In this condition she oscillates from one charitable institution to another; within a year or two she has been in Bellevue Hospital, under the care of my friend Dr. C. L. Dana, who has kindly given me the notes of her case taken by him. She is to-day fairly well nourished, has a good appetite and average strength; her mental state is fully as good if not even better than it was when I saw her first in 1882. There is diminished sensation of the cornea, but the patient can feel an object placed against it. She is in no manner hysterical. She can not move the muscles of the face to any extent so as to frown or wrinkle the forehead, which she could do fairly well several years ago. Sensation is diminished in a marked manner over the distribution of the supra-orbital frontal and nasal nerves, though there is still some sensation over the bridge of the nose. The sensation over the distribution of the occipital nerve is still good, though over the rest of the face sensation is altogether absent, except over the distribution of the mental nerve, where it is still good. There is good power in both arms and legs and no diminution of muscular sense nor ataxia. There is now some tactile sensation in these parts, though markedly diminished. Sensation on the trunk is present, though much blunted; there is a total loss of sensation from the shoulders down, except a small fold at the elbow and a narrow strip on the inside of the arms below the axillæ. On the lower limbs there is a total loss of sensation as far as Poupart's ligament anteriorly, and up to the fold of the buttock posteriorly. Plantar reflex is absent, though the patellar reflex is present. There is no ankle clonus, though there is some at the patellæ. The sense of taste is unimpaired and the vision is not perfect.

During all these years headache has been a rather constant symptom, and it has usually been benefited by large doses of iodide of potassium and of the mixed treatment. At times the patient has suffered from intermittent fever of the tertian and quartan types.

The clinical history of this case is so clear and full that I think it needs no further elaboration. Its symptoms and course point unmistakably to degenerative changes in the nerves of the face and upper and lower extremities. Throughout its whole course the case presented no symptoms pointing to lesions of the brain and spinal cord, therefore I think there can be no doubt that it is an excellent instance of multiple neuritis.* This brings us to the ques-

* Cases of neuritis affecting the upper and lower extremities and leading to deformities similar to those of my case have been published

tion of ætiology. As the literature and our knowledge of syphilitic multiple neuritis were almost wholly wanting during the early years of this case, I was for a time uncertain as to its real nature. But, as contributions have appeared and our knowledge of the general subject has expanded, my conviction has grown strong that the chronic morbid changes in the nerves of this patient were caused by syphilis. A brief review of the case shows that about eighteen months after syphilitic infection analgesia appeared in the backs of the hands of this woman. This symptom in her was, as I myself observed, precisely similar to what we occasionally see in recently syphilitic women, particularly those suffering from a chlorotic condition or from a neurotic or hysterical state. In most women this analgesia of the secondary stage of syphilis is transitory in character and disappears in one or more months, and in exceptional cases is found to relapse. In the present case the disturbances in the portions of the nerves situated in the dorsum of the hands did not end there, but increased until the fingers were involved, and they also slowly spread up the arms even as far as the trunk. Later on a similar disturbance appeared and ran a similar course in the legs. Coincidently with the development and course of this nervous affection we find that the woman presents at all stages unmistakable lesions of syphilis in other parts of the body, such as the eyes, the subcutaneous connective tissues, and the fibrous tissues. Certainly no history of concomitant symptoms in a case could be clearer and more satisfactory. The next question which arises is, What was the nature of the lesion of the nerves? From a study of this case, aided by our knowledge of the tendency of syphilis to produce inflammation in connective tissues, I am led to believe that the morbid change begins as a low grade of inflammatory process in the fibrous elements and envelopes of the nerves, and that, as this increases, hyperplasia of these elements occurs, which results in compression and degeneration of the nerve tissues. This conclusion is warranted by the knowledge we possess of the pathological anatomy of multiple neuritis. It is very probable that the neuralgias of syphilis are due to hyperæmia and inflammatory changes in the nerves, and that these conditions, demanding prompt relief, by reason of their severity, are usually dissipated by active mercurialization before structural degeneration of the nerve tissues has taken place. In this connection, I think, a brief history of the following case will be of interest:

A merchant, aged thirty-six, large and robust, but a little flabby, a good liver, and a fair drinker, presented an infecting chancre of sixteen days' incubation early in September, 1889. Late in October secondary manifestations—roseola, malaise, pain in joints, and erythema of the pharynx—appeared. He was at once placed upon an active syphilitic treatment, which he followed with considerable regularity for three months. At the end of this time he became negligent and indulged too much at the table, partook of too much wine, and took very little exercise. Toward the end of March, 1890, he caught a severe cold from exposure, and began to feel a slight tenderness on sitting and in walking in the left large sciatic nerve. Regarding it as an ephemeral trouble, he kept at business until the pain, which was continuous day and night, became so severe that he was forced to take to his bed. Under the influence of local mercurial frictions, with continuous dry heat, together with full doses of iodide of potassium internally, respectively thirty and fifteen grains, the severity of the pain was checked and he was able to go about with a stick in less than a fortnight. While confined to bed he had experienced pain in the parts supplied by the anterior cutaneous nerve of the same side. At this time he called attention to a number of ill-defined red patches on the inner surface of the same leg and upon the calf. Upon examination, I found six subcutaneous, not well circumscribed, doughy masses of infiltration, which were decidedly tender on pressure and the seat of soreness in walking. Urgency of business caused this gentleman to go about sooner than was prudent, and he became somewhat worse. His sciatica remained in a subdued condition, being merely a tenderness, but the pains in the anterior cutaneous nerves became rather worse. Then the subcutaneous nodules became darker in color, quite clearly circumscribed, and the seat of pain and tenderness; in other words, they developed into an eruption of typical precocious gummata. The iodide was given internally in fair quantity, and equal parts of mercurial and belladonna ointments were applied to the gummata by means of a bandage and a closely-fitting stocking. The result was that the pain in both nerves and gummata grew slowly but surely less, and that the gummata became less painful and were slowly absorbed. No local treatment was used for the neuralgia of the cutaneous nerves, but it subsided coincidently with the absorption of the subcutaneous nodules, some of which seemed fully two inches in thickness.

It is interesting to note that, synchronously with the appearance of the neuritic phenomena, typical dry onychia and separation of the nails began on several fingers of both hands and on several toes of both feet. These likewise showed signs of improvement under the local use of mercurial ointment and the general treatment. I may here remark that it has often struck me very forcibly that some of the earlier nail lesions of syphilis seem to be the result of tropho-neurosis, while others are due to inflammatory and infiltrative processes.

In this case we find that, shortly after the onset of neuralgia of the sciatic nerve in a patient suffering from early and active syphilis, true subcutaneous gummatous nodules, which we know have their nidus in the connective-tissue

by several observers; but in these there was no history of syphilis, nor did any of their symptoms point to the origin of the affection in leprosy. Hückel publishes two such cases (Zwei Fälle von schweren symmetrischen Panaritien auf trophoneurotischer Grundlage, *Münchener medicin. Wochenschrift*, July 2 and 9, 1889)—one of a woman thirty-eight years old, and a second of a man aged thirty-seven years. In both cases there were anæsthesia and analgesia with chronic symmetrical ulcerative and necrotic processes and atrophy and paresis of muscles. The upper extremities in both cases were involved before the lower ones were attacked. Some of the cases reported by Morvan and others are similar in their clinical history and in the deformities thus produced. The reader is referred to the following articles upon this subject: Le panaris nerveux, *La France médicale*, 1881, ii, pp. 325–331, by Quinquaud; De la parésie analgésique à panaris des extrémités supérieures ou paréso-analgésie des extrémités supérieures, *Gazette hebdomadaire de méd.*, Paris, 1883, 2. S., xx, pp. 580, 590, and 624, by Morvan; Nouveaux cas de paréso-analgésie des extrémités supérieures, *Gazette hebdomadaire de méd.*, Paris, 1886, 2. S., xxiii, pp. 521, 537, and 555, also by Morvan. (The disease described in these two articles has been called Morvan's disease.) Sur un cas de panaris analgésique, *Annales de dermat. et syphiligraphie*, 1885, p. 282, by Broca; and Nouveau cas de panaris analgésique, *Gazette hebdomadaire de méd.*, 1887, p. 345, by Colleville.

structures, are developed, and that the nerve changes and subdermal changes are coincidently relieved and cured by active antisyphilitic medication, local and general. I think, therefore, taking all the facts into consideration, that the conclusion is warranted that syphilis caused the nerve affection and the subcutaneous new growths by reason of its known tendency to produce hyperæmia and hyperplasia of the connective tissues. In this connection I may say that I have recently had under observation a syphilitic lady who suffered from neuralgia of the anterior crural nerves and precocious gummata of the legs, both of which disappeared under antisyphilitic treatment.

Why syphilis causes neuralgias in some cases and analgesia and anæsthesia in others is a problem yet to be solved. With only nine cases at our disposal it is evident that the chapter on the symptomatology of multiple neuritis of syphilitic origin can not now be written. It is worth while, therefore, I think, to present a brief and clear synopsis of the cases of other observers, since it will be of interest in connection with my own case and of aid to others in the study of this affection.*

Ehrmann's case, observed in Neumann's clinic, is reported in order to show conclusively that, in the active and earlier stages of syphilis, the peripheral nerves may be affected by neuritis. Its history is as follows:

A man, thirty-eight years old, entered the hospital on the 16th of December, presenting a hard chancre and generalized secondary eruptions. In his urine a large quantity of albumin, cylindrical epithelium, red and white blood-corpuscles, and epithelium from the pelvis of the kidney, were found. Under the influence of hot baths and iodide of potassium internally he seemed better in about six weeks, and the albumin was no longer found in the urine. A little later on he became jaundiced, and on the 29th of April periostitis of the left tibia caused the resumption of the iodide. Then, in a short time, periostitis of the external malleolus of the left side, pain in the tendo Achillis and in the gastrocnemii muscles, and swelling and pain in both cuboid bones, were complained of. Then it is noted that pains were felt in the first and second phalanges of the left ring finger, and a sensation of tingling on the ulnar side of the left forearm and in the ring and little fingers of the same. Careful examination of the brachial plexus showed that the nerves were very sensitive to pressure in their whole length, notably the ulnar nerve. This sensibility was well marked at the internal condyle, but it was still more pronounced in the middle of the anterior surface of the forearm; was very active at the ulnar side of the palm, from whence it extended to the ring and little fingers. Pressure upon the median nerve caused much less pain, but none in the radial. Examination showed that the nerves on the left side were much more distinctly felt than those of the right and unaffected side. The interosseous spaces of the left hand, between the metacarpals of the ring and little fingers, were visibly depressed, and all the muscles supplied by the ulnar nerve were atrophied. Extension of the ring and little fingers was incomplete at the phalangeal articulations, and they could not be moved the one on top of the other, nor could the patient place the ring finger over the middle finger.

Tests of sensibility showed hyperæsthesia of all the ulnar side of the forearm, especially at its lower portion. On the bend the hyperæsthetic zone included the parts supplied by the ulnar and median nerve, and slight punctures with a needle produced small bullæ, surrounded with a red areola. Ehrmann looks upon this fact as evidence of vaso-motor disturbance. Heat and cold produced pain in the hyperæsthetic zone. The electrical irritability of the ulnar and median nerves was diminished; patellar reflex was well marked on both sides, and the tendon reflex of the upper extremities was the same on both sides. A fair amount of improvement was produced by the iodide, in doses of thirty grains daily, but the symptoms were still manifest in July.

Buzzard's first case was that of a man, aged thirty-one, who suffered from pain in the right leg along the course of the sciatic nerve and its branches. The patient had lost flesh and the leg was weak and withered. The history of syphilis was not at all clear, and the diagnosis of a specific origin of the trouble was based largely upon a putative node on the right femur. Under the influence of iodide of potassium the pain ceased and the node was absorbed.

Buzzard's case, in his second contribution, was as follows: W. H., a workingman, aged forty-four, of previous good health, in January, 1873, had double facial paralysis, total absence of power of voluntary contraction in the muscles of either leg, the grasp of both hands was entirely lost, and there was partial paralysis of respiration and deglutition. There was incomplete paralysis of the right external rectus muscle and of the soft palate, especially on the left side. There was but little movement of the diaphragm and very imperfect action of the intercostal muscles. There was more or less anæsthesia of the body, extremities, and face. A sense of numbness and weight was complained of in each leg; the brain and viscera were seemingly in normal condition. This condition began a month previous, with numbness in the finger-ends and weakness in the legs, together with a pin-and-needle sensation and numbness in the calves, thighs, and buttocks. In a few days he could use neither arms nor legs. Owing to the syphilitic history obtained, he was treated with the iodide of potassium, and later with mercury. Improvement soon began, and in six months the patient was able to resume his employment, and later on was pronounced to be entirely recovered.

Ormerod's case was that of a woman, aged twenty-three, who presented an enlargement of the left median nerve in the upper arm. The nerve was thicker than a quill, and the muscles supplied by it were wasted. The two last joints of the index and middle fingers and the last joint of the thumb were anæsthetic. The skin of the last joint of the index finger had been red, glossy, and ulcerated, but the condition had passed away under treatment. There had been an attack of pain in the nerve five years ago, but this had passed off, leaving no permanent damage. Two and a half years ago the pain had recurred, leaving the present condition. The patient presented several unequivocal signs of congenital syphilis. In favor of this view were the facts that no other cause could be assigned, that the ulcer had healed under iodide of potassium, and that deafness had much increased during the few months preceding the last attack of neuritis.

In the discussion of this case Mr. Jonathan Hutchinson stated his belief that the patient's condition was probably dependent upon syphilis, but he had never seen a similar

* In this connection it is well to remember that cases of syphilis in which one or more fingers of both hands have become cold and livid, and even ulcerated, have been reported by Hutchinson (*Med. Times and Gazette*, 1884, i, p. 347), by Klotz (*American Journal of the Medical Sciences*, Aug., 1889), by Baron d'Ornellas (*Annales de dermatologie et de syphiligraphie*, June, 1888, p. 35 *et seq.*), and by J. E. Morgan (*Lancet*, July 6, 1889). In the present state of our knowledge an obliterating arteritis is the ascribed cause of this condition. The relation of the nervous system to it is yet to be determined.

case in congenital syphilis, although he had seen an example of neuritis of one of the nerves of the arm from the acquired disease.

Dr. Mills regarded cases of pure and simple multiple neuritis as rare. He reported three with a distinct syphilitic history. He frequently found certain cases of paralysis in which a clear history of syphilis or of chronic alcoholism, or both, was present. These two factors were so often conjoined in the history of the same case that it was sometimes difficult to separate such cases into two subdivisions, one of which represented a type clearly syphilitic and the other clearly alcoholic. Sometimes he had been able to do this. His three cases, of which he presented the notes (which, unfortunately, are not published), presented the usual features, sensory and paralytic, of multiple neuritis, and he remarks that this affection, when due to alcohol, is almost similar in its symptomatology. Specific treatment benefited the former but had no effect upon the latter. Mills states that in these cases there are points of resemblance between neuritis, myelitis, and poliomyelitis. He believes that there are no clear diagnostic points between these affections which would enable us to say positively that here was a case of multiple neuritis, there one of diffuse myelitis, and, still further, one of myelitis anterior. There were symptoms which rendered the diagnosis probable, but more could not be said in certain cases with safety.

Leyden's case is reported in a very cursory manner. It is as follows: A healthy young man, accustomed to muscular exercise, was attacked by terrible pains and paretic weakness of the arms, with distinct atrophy and pathological conditions with the electric current. When he consulted Leyden he presented a florid secondary eruption, therefore his neuritic symptoms were ascribed to syphilis. Later on the patient had a specific affection of the liver, and was finally cured of his syphilis, as well as of the neuritis.

Bowlby * speaks of the case of a man, aged fifty-four, who had suffered from syphilis for many years, in whom a gradual paralysis of the parts supplied by the ulnar nerve had commenced ten years before he came under observation. The hand was clawed, the interossei muscles and those forming the ball of the little finger were extremely wasted, and there was very definite atrophy of the ulnar side of the forearm. The skin supplied by the ulnar nerve was quite anæsthetic. This nerve could be felt behind the elbow as a thick, hard cord, not less than four or five times its natural size, the thickening extending along the trunk for about two inches. It was slightly painful and tender.

Several gentlemen of prominence who have seen my case were disposed to consider it to be one of leprosy. In the light of the history given, I think such a diagnosis is untenable. In this connection, however, I have thought it worth while to summarize the following case, in which a coincidence of leprosy and syphilis in the same subject is claimed. With this view I am not at all in accord, and I think that the facts which I have brought forward in this essay will convince others, as they have convinced me, that in Kaposi's case the nervous symptoms were produced by syphilis alone.

Kaposi's case,* shown before the Imperial Society of Vienna in 1888, was that of a man, aged thirty-one years, born of healthy parents in a country where lepra is not epidemic. In 1884 he contracted syphilis. After several years passed in Asia he returned to Germany for treatment of his syphilis. At that time he presented new lesions—ulceration of the palmar surface of the right index fingers, pains radiating from that finger to the shoulder, red spots upon the right hand, anæsthesia of the index finger, and hyperæsthesia of the other fingers of this hand. Later on new patches, similar to gummata, appeared. The circumference of the right arm became less than that of the left, while at the right wrist the circumference was a little greater than that of the left. The right index finger was longer than that of the left, and it presented a fusiform thickening. The right hand was covered with irregularly distributed, diffuse patches. The movements of the right arm were impaired, though muscular contractions were normal.

There was infiltration in the right superciliary region from the middle of the brow to the external angle of the eye, which at its internal edge was hard and elastic and became soft as it progressed outward. This infiltration, like that of the hand, was painful on pressure but in parts anæsthetic. Around it was a zone of hyperæsthesia. There were anæsthetic patches also on the hand.

Kaposi, in considering the ætiology of this case, says that the view that it might be due to syphilitic neuritis could surely be excluded for the reason that a spinal nerve can not be affected by syphilis unless it is in contact with a gumma. Further, he thinks that if syphilitic neuritis did exist it was not because of the cutaneous lesions, for he does not think that they were of syphilitic origin. Lupus was also excluded by him.

The clinical tableau, consisting of the anæsthesia, the rapid succession of the eruptions, the nature of the infiltration, the neurotic symptoms, and the functional troubles, he thinks prove conclusively that it was due to anæsthetic leprosy.

Kaposi states, however, that neither he nor his assistants could find the bacillus of leprosy, but he explains this by the fact that the disease was as yet in its initial stage. Further, he states that Hansen says that bacilli are never found in anæsthetic leprosy.

Kaposi looks upon this case as one showing the existence of syphilis and leprosy in the same individual, and states that it is the only example of this morbid coincidence which he has seen.

Danielssen once successfully inoculated a leper with syphilis.

40 West Twenty-first Street.

* *Loc. cit.*, p. 463.

* Lèpre et syphilis chez le même individu. *La Semaine médicale*, 1888, p. 487.